**Rolling Dice~**

**Experimental Probability**

With your group roll a pair of dice 25 times and each time record the **sum** that results. Record the results using tick marks in the table below. When you are finished make a bar graph of your data and then answer the questions below.



1) According to your experiment, what is P(7)? P(4)? P(12)?

2) What numbers are more likely to be rolled? Why do you think there is a greater likelihood of some rolls?

**Theoretical Probability**

Complete the table below for all possible sums when 2 dice are rolled, then answer the questions below.



3) What roll is the most likely, what is its theoretical probability? What roll is the least likely, what is its theoretical probability?

4) Do the results in the table explain why some results are more likely than others to occur? Explain in your own words why some rolls are more likely than others.

**~Deck of Cards~**

**Independent Events**

Use a standard deck of 52-cards. Take turns drawing a card from the deck, recording what the card was, and putting the drawn card back into the deck. Do this 25 times and record each card you draw in the table. Then, answer the following questions.

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1. What are the four types of suits in the deck? Draw a picture to represent each suit and label them.
2. What are the possible cards for each suit? So, how many cards are there per suit?
3. What is the theoretical probability of the following?

P(hearts) P(face card) P(Ace) P(Jack or Queen)

1. What is your experimental probability of drawing an Ace?

**Dependent Events**

Use a standard deck of 52-cards. Take turns drawing a card from the deck, recording what the card was, and NOT replacing the drawn card—instead place the drawn cards aside and DO NOT put them back into the deck! Draw 25 cards and record each card you draw in the table. Then, answer the following questions.

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1. How is this card experiment different than the independent events?
2. What is the theoretical probability that the first card drawn would be an ACE?
3. Let’s say the first card drawn was an ACE, woohoo! What is the theoretical probability that in this experiment the second card drawn would also be an ACE?
4. Create your own examples (on the back of this page) of a probability experiment that could demonstrate independent and dependent events. Be ready to share your ideas!